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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/863,948	05/23/2001	John K. Hynes	16072-149	1013

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EXAMINER

FIGUEROA, FELIX O

ART UNIT	PAPER NUMBER
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2833

DATE MAILED: 12/16/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/863,948

Applicant(s)

HYNES ET AL.

Examiner

Felix O. Figueroa

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NW

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 June 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 June 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Specification

The specification remains objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: the length of the post being equal to the thickness of the fusing interface (as required by claim 20).

The amendment filed 6/23/03 is objected to under 35 U.S.C. 132 because it introduces new matter into the disclosure. 35 U.S.C. 132 states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: the insulating posts are independent of and attached to the insulating substrate, as recite by amended claim 5.

Applicant is required to cancel the new matter in the reply to this Office Action.

Drawings

The drawings remain objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the length of the post being equal to the thickness of the fusing interface (as required by claim 20), must be shown or the features canceled from the claims. No new matter should be entered.

Claim Objections

Claims 1, 6, 7, 18 and 21 are objected to because of the following informalities:

In claim 1 line 7, it is suggested that "respective" be deleted. In line 13, "the respective" should be --a respective.

In claim 6 line 2, the repeated word "the" should be deleted.

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In claim 7 line 1, "the length" lacks antecedent basis. In line 2, "the diameter" lacks antecedent basis.

In claim 18 line 11, "using" should be --fusing--.

In claim 21 line 12, "the surface" lacks antecedent basis.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 5 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Please note that the specification as originally filed does not provide basis for amended claim 5, which recites that the insulating posts are independent of and attached to the insulating substrate.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 5 and 7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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Claim 5 recite that the insulating posts are "independent of" and "attached to" the insulating substrate. It is unclear how the posts can be independent of the substrate if they are attached to it.

Claim 7 recites "an adjacent solder ball" which appears to be the same element disclosed by claim 1 as a "reflowable electrical conductor". Applicant is required to clearly define the relationship between these limitations.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-11, 21 and 22 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pei et al. (US 5,997,317).

Prior Art Fig. 6 of Pei (PAF of Pei) discloses an electrical connector portion (5) comprising an insulating substrate (52) having a first major face (521) and an oppositely disposed second major face; a plurality of non-recessed apertures (not labeled) extending from the first major surface to the second major surface; a plurality of elongated electrically conductive members (51) extending through the apertures; and a plurality of reflowable electrical conductors (23) disposed adjacent the first major face, the elongated conductors extending into a respective reflowable conductor.

The PAF of Pei discloses substantially the claimed invention except for the plurality of insulating posts. Pei teaches (in Fig.5) a plurality (a pair) of insulating posts

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extending from a first major face (12) to limit the position (col.3 lines 1-2) of the reflowable conductors (23). Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to form the first major face with a plurality of insulating posts, as taught by Pei, to limit the position of the reflowable conductors.

Pei, as modified, discloses substantially the claimed invention except for the number of contact locations, i.e. the number of posts per conductor. It would have been obvious to one having ordinary skill in the art at the time the invention was made to form the connector portion of Pei having four (two pairs) insulating post for each reflowable conductor in order to limit the reflowable conductor in many directions, and since it has been held that mere duplication of parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8.

Regarding claim 2, Pei also discloses the elongated conductor extending substantially beyond the first major surface.

Regarding claims 3 and 4, Pei discloses substantially the claimed invention except for the specific shape of the apertures. However, it would have been an obvious matter of design preference to elect a specific shape, such as a cylindrical or rectangular, since applicant has not disclosed that such shape solves any stated problem or is for any particular purpose and it appears that the invention would perform equally well independently from the shape of the aperture.

Regarding claims 8 and 9, Pei discloses substantially the claimed invention except for the shape of the specific shapes of the posts. However, it would have been

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an obvious matter of design choice to form the post in different shapes, since applicant has not disclosed that such modification solves any stated problem or is for any particular purpose and it appears that the invention would perform equally well with the posts shown by Pei.

Claims 12-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pei et al in view of Swamy et al. (US 5,613,033).

Pei discloses (as previously discussed) substantially the claimed invention except for plurality of insulating plates. Swamy teaches a plurality of insulating plates stacked on top of a PCB to minimize PCB interconnect area. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to form a plurality of insulating plates, as taught by Swamy, to minimize PCP interconnect area.

Regarding claims 15 and 16, see discussion on claims 8 and 9.

Regarding claim 20, Pei, as modified, discloses the claimed invention except for length of the posts. It would have been an obvious matter of design preference to form the posts having a length equal to the fusing interface thickness, since such modification would have involved a mere change in the size of a component. A change in size is recognized as being within the level of ordinary skill in the art. *In re rose*, 105 USPQ 237 (CCPA 1955).

Response to Arguments

Applicant's arguments filed 6/23/03 have been fully considered but they are not persuasive.

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In response to applicant's arguments the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, it would have been obvious to one of ordinary skill in the art that the provision of multiple pairs of post will better limit of the reflowable conductors by contacting the reflowable conductor in more directions.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

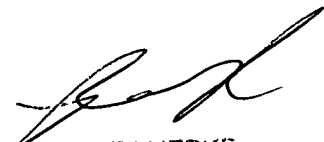
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Felix O. Figueroa whose telephone number is (703) 308-0097. The examiner can normally be reached on Mon.-Fri., 8:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paula Bradley can be reached on (703) 308-2319. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1782.

ffr



RENEE LUEBKE
PRIMARY EXAMINER